

WHAT IS CLAIMED IS:

1. A medical image photographing system,  
comprising:

a first medical image photographing apparatus;

5 a second medical image photographing apparatus;

and

a data managing system connected to said first and  
second medical image photographing apparatuses via  
a network,

10 wherein said first medical image photographing  
apparatus includes:

a photographing system to obtain photographing  
data related to a subject by photographing the subject  
under at least one photographing condition; and

15 a transmitter to transmit, via said network to  
said data managing system, said photographing data and  
appended information, which is information included in  
said at least one photographing condition and needed to  
generate biological information related to the subject,

20 and

wherein said data managing system includes:

a first receiver to receive said photographing  
data and said appended information;

25 a memory to store said photographing data and said  
appended information received; and

a second transmitter to transmit said photograph-  
ing data and said appended information to said second

medical image photographing apparatus, and

wherein said second medical image photographing apparatus includes:

5 a second receiver to receive said photographing data and said appended information; and

a biological information generating unit to generate the biological information related to the subject, based on said photographing data and said appended information received.

10 2. The medical image photographing system according to claim 1, wherein:

each of said first and second medical image photographing apparatuses is one of an X-ray computed tomographic apparatus, an X-ray diagnostic apparatus, 15 a magnetic resonance imaging apparatus, an ultrasonic diagnostic apparatus, and a nuclear medical diagnostic apparatus; and

the biological information is a time intensity curve.

20 3. The medical image photographing system according to claim 1, wherein:

each of said first and second medical image photographing apparatuses is an X-ray computed tomographic apparatus having a plurality of data 25 acquisition element arrays;

said photographing data is one of raw data and projection data;

the biological information is a reconstruction image; and

said appended information includes information related to the number of element arrays used to read  
5 out data among said plurality of data acquisition element arrays.

4. The medical image photographing system according to claim 1, wherein:

each of said first and second medical image  
10 photographing apparatuses is a magnetic resonance imaging apparatus;

said photographing data is one of raw data and projection data;

the biological information is a reconstruction  
15 image; and

said appended information includes information related to a channel band for a high-frequency receiving coil.

5. An X-ray computed tomographic system,  
20 comprising:

a first X-ray computed tomographic apparatus;  
a second X-ray computed tomographic apparatus; and  
a data managing system connected to said first  
and second X-ray computed tomographic apparatuses via  
25 a network,

wherein said first X-ray computed tomographic apparatus includes:

an X-ray irradiating unit to irradiate an X-ray to a subject while rotating about the subject;

an X-ray detecting unit having a plurality of detecting element arrays aligned in a slice direction, in each of which a plurality of detecting elements, each generating electrical charges based on an incident X-ray, are aligned in a channel direction;

a data acquisition unit, having a plurality of data acquisition element arrays, to read out the electrical charges from said plurality of detecting elements by using a certain number of data acquisition element arrays among said plurality of data acquisition element arrays and generate photographing data based on the electrical charges; and

a first transmission unit to transmit, via said network to said data managing system, said photographing data and appended information including the number of data acquisition element arrays used when reading out the electrical charges, and

wherein said data managing system includes:

a first reception unit to receive said photographing data and said appended information;

a storage unit to store said photographing data and said appended information received; and

a second transmission unit to transmit said photographing data and said appended information to said second X-ray computed tomographic apparatus, and

wherein said second X-ray computed tomographic apparatus includes:

a second reception unit to receive said photographing data and said appended information; and

5 a reconstruction unit to perform image reconstruction based on said photographing data and said appended information received.

6. The X-ray computed tomographic system according to claim 5, wherein said photographing data  
10 is one of raw data and projection data.

7. The X-ray computed tomographic system according to claim 5, wherein said first transmission unit transmits said photographing data and said appended information including information related to  
15 the number of the data acquisition elements in the slice direction to said data managing system via said network.

8. The X-ray computed tomographic system according to claim 5, wherein said reconstruction unit  
20 chooses, based on the number of arrays used, one of a first reconstruction method that does not concern an influence of a cone angle of an X-ray irradiated from said X-ray irradiating unit and a second reconstruction method that concerns the influence of the cone angle of  
25 the X-ray, and performs image reconstruction through the reconstruction method chosen.

9. The X-ray computed tomographic system

according to claim 5, wherein said reconstruction unit chooses said first reconstruction method when 4 is given as said certain number, and said second reconstruction method when one of 8 and 16 is given as  
5 said certain number.

10. The X-ray computed tomographic system according to claim 5, wherein:

said data managing system further includes a judging unit to judge, based on said appended  
10 information, whether image reconstruction based on said photographing data is possible in said second X-ray computed tomographic apparatus; and

said second transmission unit transmits said photographing data and said appended information to  
15 said second X-ray computed tomographic apparatus only when said judging unit judges the reconstruction as being possible.

11. The X-ray computed tomographic system according to claim 5, wherein said data managing system  
20 further includes a backup data generating unit to generate backup data in a certain storage unit, based on said photographing data and said appended information.

12. The X-ray computed tomographic system  
25 according to claim 11, wherein:

said data managing system further includes a table creating unit to create a table that correlates said

photographing data and said appended information with the storage unit in which said backup data has been generated; and

said storage unit stores said table.

5           13. The X-ray computed tomographic system according to claim 5, wherein said first X-ray computed tomographic apparatus and said second X-ray computed tomographic apparatus are a single apparatus.

10           14. A data managing system connected to a first X-ray computed tomographic apparatus and a second X-ray computed tomographic apparatus via a network, said data managing system comprising:

15           a reception unit to receive, from said first X-ray computed tomographic apparatus, one of raw data and projection data obtained in said first X-ray computed tomographic apparatus and appended information including the number of data acquisition element arrays used when obtaining one of said raw data and said projection data;

20           a storage unit to store one of said raw data and said projection data, and said appended information received; and

25           a transmission unit to transmit one of said raw data and said projection data, and said appended information to said second X-ray computed tomographic apparatus.

15. The data managing system according to

claim 14, further comprising a backup data generating unit to generate backup data in a certain storage unit, based on said projection data and said appended information.

5           16. The data managing system according to claim 14, further comprising:

          a judging unit to judge, based on said appended information, whether image reconstruction based on one of said raw data and said projection data is possible  
10       in said second X-ray computed tomographic apparatus,  
          wherein said transmission unit transmits one of said raw data and said projection data, and said appended information to said second X-ray computed tomographic apparatus when said judging unit judges  
15       the reconstruction as being possible.

          17. The data managing system according to claim 16, further comprising:

          a data processing unit to process one of said raw data and said projection data to enable one of  
20       generation and display of a reconstruction image based on one of said raw data and said projection data in said second X-ray computed tomographic apparatus when said judging unit judges the reconstruction as being impossible,

25       wherein said transmission unit transmits said appended information and one of said raw data and said projection data processed by said processing unit to



said second X-ray computed tomographic apparatus when said judging unit judges the reconstruction as being impossible.

18. The data managing system according to  
5 claim 16, wherein:

said data processing unit performs image reconstruction based on one of said raw data and said projection data, and said appended information; and

said transmission unit transmits reconstruction  
10 image data to said second X-ray computed tomographic apparatus.

19. The data managing system according to claim 14, further comprising:

a table creating unit to create a table that  
15 correlates one of said raw data and said projection data, and said appended information with the storage unit in which said backup data has been generated,  
wherein said storage unit stores said table.

20. An X-ray computed tomographic apparatus  
20 connected, via a network, to a data managing system managing projection data, said apparatus comprising:

an X-ray irradiating unit to irradiate an X-ray to a subject while rotating about the subject;

an X-ray detecting unit having a plurality of  
25 detecting element arrays aligned in a slice direction, in each of which a plurality of detecting elements, each generating electrical charges based on an incident

X-ray, are aligned in a channel direction;

5 a data acquisition unit, having a plurality of data acquisition element arrays, to read the electrical charges from said plurality of detecting elements by using a certain number of data acquisition element arrays among said plurality of data acquisition element arrays and generate one of raw data and projection data based on the electrical charges; and

10 a transmission unit to transmit, via said network to said data managing system, one of said raw data and said projection data, and appended information including the number of data acquisition element arrays used when reading out the electrical charges.

15 21. The X-ray computed tomographic apparatus according to claim 20, wherein said transmission unit transmits said projection data and said appended information including information related to the number of said data acquisition elements in the slice direction to said data managing system via said  
20 network.

22. An X-ray computed tomographic apparatus connected, via a network, to a data managing system managing projection data, said apparatus comprising:

25 a reception unit to receive, from said data managing system, one of raw data and projection data obtained in an X-ray computed tomographic apparatus, and appended information including the number of data

acquisition element arrays used when obtaining one of said raw data and said projection data; and

5 a reconstruction unit to perform image reconstruction based on one of said raw data and said projection data, and said appended information received.

23. The X-ray computed tomographic apparatus according to claim 22, wherein said reconstruction unit chooses, based on the number of arrays used, one of  
10 a first reconstruction method that does not concern an influence of a cone angle of an X-ray irradiated from said X-ray irradiating unit and a second reconstruction method that concerns the influence of the cone angle of the X-ray, and performs image reconstruction through the reconstruction method  
15 chosen.

24. The X-ray computed tomographic apparatus according to claim 22, wherein said reconstruction unit chooses said first reconstruction method when 4 is given as the number of data acquisition element arrays  
20 used, and said second reconstruction method when one of 8 and 16 is given as said certain number.

25. The X-ray computed tomographic apparatus according to claim 22, further comprising:

25 a judging unit to judge whether one of said raw data and said projection data transmitted from said data managing system is reconstructible in said reconstruction unit,

wherein said reception unit receives one of said raw data and said projection data, and said appended information only when said judging unit judges the reconstruction as being possible.

5           26. The X-ray computed tomographic apparatus according to claim 22, further comprising:

          a judging unit to judge whether one of said raw data and said projection data transmitted from said data managing system is reconstructible in said  
10 reconstruction unit; and

          a request unit to request said data managing system to perform data processing on one of said raw data and said projection data to enable one of generation and display of a reconstruction image based  
15 on one of said raw data and said projection data in said X-ray computed tomographic apparatus when said judging unit judges the reconstruction as being possible,

          wherein said reception unit receives, from said  
20 data managing system, said appended information and one of said raw data and said projection data having been processed.